§ 42.130 Description and qualifications.

(a) In many instances, food containers are loaded directly into carriers immediately after final packaging. This situation makes stationary lot sampling and inspection impractical. For such circumstances, the optional procedure for on-line sampling and inspection using cumulative sum sampling plans is provided. On-line sampling and inspection is a procedure in which subgroups of sampling units are selected randomly from predesignated portions of production. The acceptability of the portions of production is determined by inspecting, at the time of the sampling, the subgroups which represent these portions. On-line sampling and inspection contrasts with stationary lot procedures in which sample units are selected randomly and inspected and lot acceptability determinations are made only after lot production is completed.

(b) On-line sampling and inspection procedures may be instituted only when all of the following conditions are met:

(1) When authorized by the Administrator and acceptable to the user and producer, if different from the user.

(2) When inspection is origin inspection (see § 42.102).

(3) When previous production lots from the producer are currently on, or eligible to be on, either normal or reduced inspection. (When shifting from stationary lot sampling and inspection to on-line sampling and inspection, normal on-line inspection shall be initially used.)

(4) When inspection of the containers is performed at a point after which all condition of container related characteristics are fixed and will not be subject to change during final handling.

§ 42.131 Selection of samples.

(a) Prior to commencement of on-line sampling and inspection, the total amount of production for a given day or shift is predicted and is then subdivided into conveniently designated portions of production approximately equal in size. Portions may be designated by sequential numbers (e.g., containers 1 through 500 are portion 1, containers 501 through 1000 are portion 2, etc.) or by time intervals (e.g., the first half hour of production is portion 1, the second half hour of production is portion 2, etc.) during which the containers are identified by individual production codes for each time interval.

(b) Determine the number of sample units in a subgroup as follows:

Type of Inspection and Number of Sample Units

Normal—25
Tightened—50
Reduced—13

(c) Subgroups are drawn randomly from portions of production throughout the production process and are inspected for defects. The drawing of sampling units may be done in either of two ways: (1) The number of sample units (13, 25 or 50) comprising a subgroup may be drawn at the same time from a randomly chosen point in the production of each portion, or (2) sample units may be drawn individually, but in a random manner, throughout the production of each portion. At least 6 subgroups must be obtained during each basic inspection period regardless of the system used to designate portions of production.

(d) A shift to on-line sampling plans from stationary lot sampling plans (or vice versa) during a basic inspection period is not permitted.

§ 42.132 Determining cumulative sum values.

(a) The parameters for the on-line cumulative sum sampling plans for AQL's applicable to origin inspection are as follows:

Acceptable quality levels	Type of inspection								
	Normal			Tightened			Reduced		
	T	L	S	T	L	S	T	L	S
0.25	0.05	0.95	0.35	0.1	0.9	0.3	0	0	0
1.5	0.5	2	1	0.8	1.6	0.4	0.5	0.5	0
6.5	2	3	1	2.5	3	1	.....	2	1

(b) At the beginning of the basic inspection period, the CuSum value is set equal to the starting value ("S") for the specified CuSum plan. The CuSum value is then determined for each consecutive subgroup as follows:

(1) Add the number of defects for the present subgroup to the CuSum value of the previous subgroup.

(2) Subtract the subgroup tolerance ("T").

(3) The CuSum value is reset in the following situations; however, determine portion of production acceptability (see §42.133) prior to resetting the CuSum value:

(i) Reset the CuSum value to zero (0) if the CuSum value is less than zero (0).

(ii) Reset the CuSum value to the acceptance limit ("L") if the CuSum value exceeds the acceptance limit ("L").

§42.133 Portion of production acceptance criteria.

(a) The acceptability of a portion of production is determined by comparing the calculated CuSum value with the acceptance limit ("L") for the specified AQL.

(b) A portion of production is acceptable if the CuSum value, calculated from the subgroup representing that portion, is equal to or less than the acceptance limit ("L") for all classes of defects.

(c) A portion of production is rejected if the CuSum value, calculated from the subgroup representing that portion, exceeds the acceptance limit ("L") for one or more classes of defects.

§42.134 Disposition of rejected portions of production.

Rejected portions of production from the same basic inspection period may be reworked, combined together to form a lot, and resubmitted for inspection under the criteria for tightened inspection using stationary lot sampling procedures described in subpart B of this part.

§42.135 Normal, tightened or reduced on-line inspection.

(a) Normal, tightened and reduced on-line sampling plans are specified in §42.132 (Determining cumulative sum values). Normal plans shall be used except when the history of inspection permits reduced inspection or requires tightened inspection.

(b) Switching rules: Normal on-line inspection procedures shall be followed except when conditions in paragraph (b) (1) or (3) of this section are applicable or unless otherwise specified. Application of the following switching rules will be restricted to the inspection of production for one applicant at a single production location and will be based upon records of original inspections of production (excluding resubmitted portions previously rejected and reworked) at that same location.

(1) *Normal inspection to reduced inspection.* When normal inspection is in effect, reduced inspection shall be instituted provided that reduced inspection is considered desirable by the Administrator and further provided that all of the following conditions are satisfied for each class of defect:

(i) The preceding 40 consecutive portions of production have been on normal inspection and no more than one of these portions has been rejected on original inspection; and

(ii) The total number of defects in the subgroups (1000 sample units) from these preceding 40 consecutive portions of production is less than or equal to the following limit numbers for the specified AQL's:

Acceptable quality levels	Limit No.
0.25	0
1.5	9
6.5	54

(2) *Reduced inspection to normal inspection.* When reduced inspection is in effect, normal inspection shall be reinstituted if any of the following occurs:

(i) More than one portion of production in any 40 consecutive portions of production is rejected on original inspection; or

(ii) Production becomes irregular (delayed or accelerated); or

(iii) Other valid conditions warrant that normal inspection shall be reinstituted.

(3) *Normal inspection to tightened inspection.* When normal inspection is in effect, tightened inspection shall be instituted when two out of five consecutive portions of production have been rejected.